L 03782-67

ACC NR: AT6028562 O

minimum pressure zone, a compression ratio of 44 and a pressure drop of 340 can be obtained. The overall results indicate that the operation of a conventional ejector can be substantially improved by installing a central tube for the low-pressure gas. Orig. art. has: 12 figures. [PV]

SUB CODE: 21/ SUBM DATE: 06Apr66/ ATD PRESS: 5063

Card 2/2 HL

ACC NR: AT6008853 SOURCE CODE: UR/0000/65/000/000/0137/0146

AUTHOR: Fertik, S. M.; Taller, Ye. G.; Konotop, V. V.; Linetskiy, V. Ya.; Gladkov, V. S.; Goliushko, G. M.

ORG: none

TITLE: Design of a capacitor bank with stored energy of 625 kJ for the production of strong magnetic fields

SOURCE: AN UkrSSR. Magnitnyye lovushki (Magnetic traps). Kiev, Naukova dumka, 1965, 137-146

TOPIC TAGS: electric capacitor, electric capacitance, electric inductance, electric power source, electric network/ KIMS-1 electric capacitor

ABSTRACT: The article describes the design and final construction of a capacitor bank rated 625 kJ and intended to operate at four different charging voltages (50, 100, 200, and 250 kv), with much larger operating life than earlier designs (not less than 200 000 discharges as against 2000 - 5000) and with low total inductance. The main stages of the development consisted of designing a special capacitor (type KIMS-1), rated 10 μF (12.5 kJ), and a special system of interconnecting and switching the capacitor bank, consisting of special discharge gaps and various high-voltage coaxial cables. Problems involved in stacking the capacitors into columns, mechanical strength and safety during discharge are also discussed. Orig. art. has: 4 figures, 5 formulas, and 2 tables.

SUB CODE: 09/ SUBM DATE: 20Oct65

Card 1/1

ACC NR: AT6008854

SOURCE CODE: UR/0000/65/000/000/0147/0156

AUTHOR: Konotop, V. V.; Gladkov, V. S.; Nemchenko, Yu. S.

ORG: none

TITLE: Investigation of the operation of a capacitor bank with stored energy of 625 kJ using a physical model

SOURCE: AN UkrSSR. Magnitnyye lovushki (Magnetic traps). Kiev, Naukova dumka, 1965, 147-156

TOPIC TAGS: electric network, test model, electric capacitor, differential equation

ABSTRACT: The authors describe a model constructed to simulate the low-inductance capacitor bank described in a companion paper (Acc. Nr. AT6008853). The equivalent circuit of the battery consisted of 99 reactive elements, so connected that the order of differential equations to be solved is reduced to 29. The purpose of the test was to check whether the capacitor bank is correctly connected (the switching elements installed in the proper places), to determine the voltages that can occur in the capacitor-bank elements during normal and emergency conditions, and to assess the effect of different lengths of the interconnecting cables on the operation of the bank. Low-voltage capacitors (KBG, KSO, and KTK) were used in the model. The coaxial cable was replaced by artificial lines with lumped constants. Tables showing the characteristics of the different circuits and oscillograms showing the results of simulated transient tests are presented. The emergency conditions simulated wre a short circuit

Card 1/2

ACC NR: AT6008854

of the load, a short circuit of the cable during the charging of the capacitor bank, and a short circuit of one capacitor at nominal charging voltage. The tests have shown that the increase in the current of individual capacitors occurring under the abnormal conditions does not exceed the safety factor incorporated in the design. Orig. art. has: 5 figures, 5 formulas, and 2 tables.

SUB CODE: 09/ SUBM DATE: 20Oct65

Card 2/2

L 22691-66 EWT(1)/EWA(h)

ACC NR: AP6001577 (A) SOURCE CODE: UR/0120/65/000/006/0121/0123

AUTHOR: Konotop, V. V.; Linetskiy, V. Ya.; Fertik, S. M.

ORG: Khar'kov Polytechnic Institute (Khar'kovskiy politekhnicheskiy institut)

TITLE: High-voltage low-inductance capacitors with a built-in trigatron

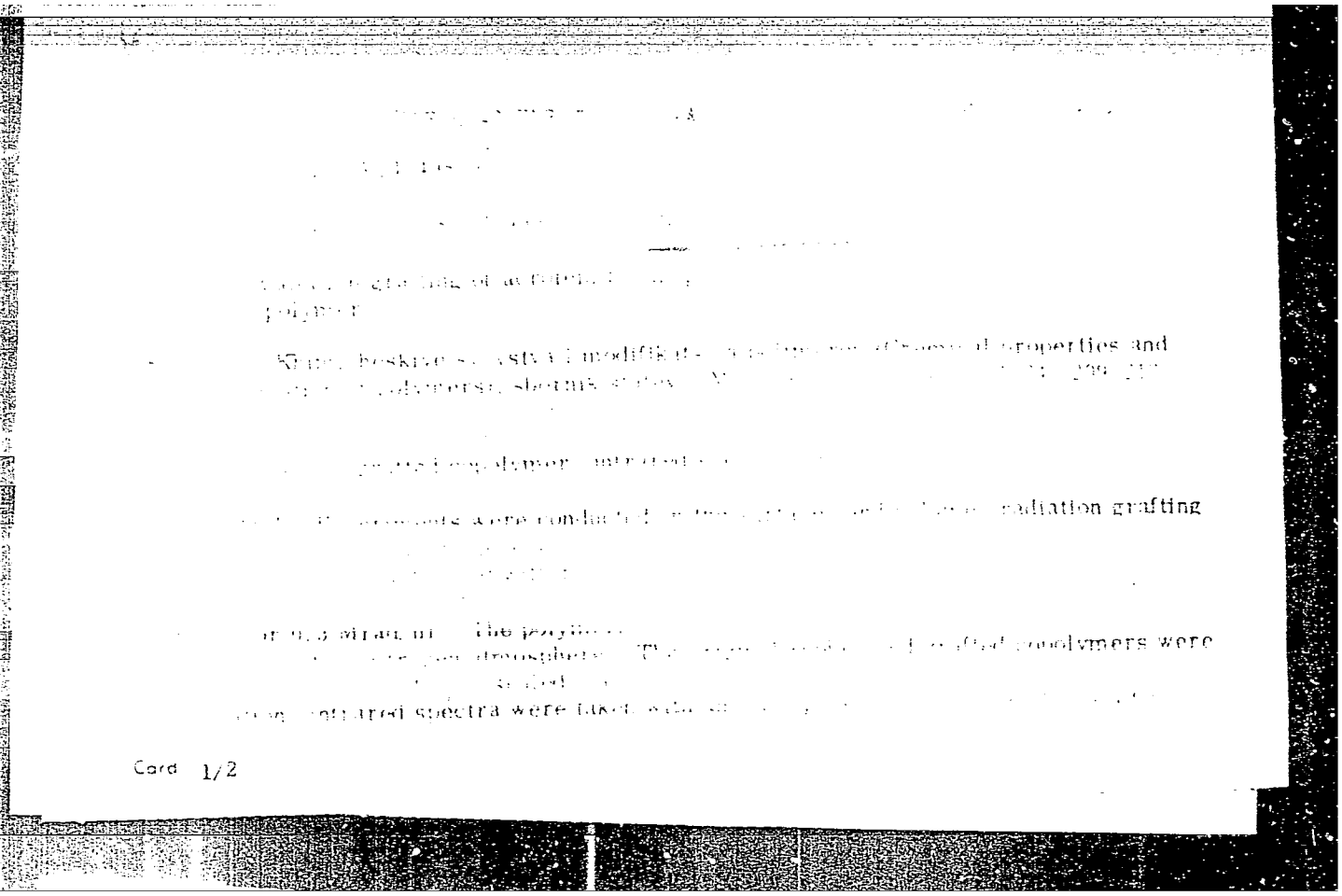
SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1965, 121-123

TOPIC TAGS: capacitor, high voltage capacitor, electric inductance/ KIM capacitor

ABSTRACT: As most of the undesirable inductance of a h-v impulse generator lies in the conductors connecting the storage capacitor with its trigatron discharger, a combined trigatron-capacitor design is proposed (see similar ideas in Sc. Instr., 1961, 38, no. 4, 136, by A. H. Gabriel et al.). The inductance of a conventional 20-kv trigatron-capacitor circuit used to be 40 nH; the combined design of the same elements showed an inductance of only 15 nH. Some new combined capacitors developed current impulses over 600 ka. In some cases, a load (e.g., a discharge tube), instead of the trigatron, was built into the capacitor structure. Orig. art. has: 5 figures, 2 formulas, and 1 table.

SUB CODE: 09 / SUBM DATE: 05Oct64 / ORIG REF: 003 / OTH REF: 001

Card 1/1 UDC: 537.54



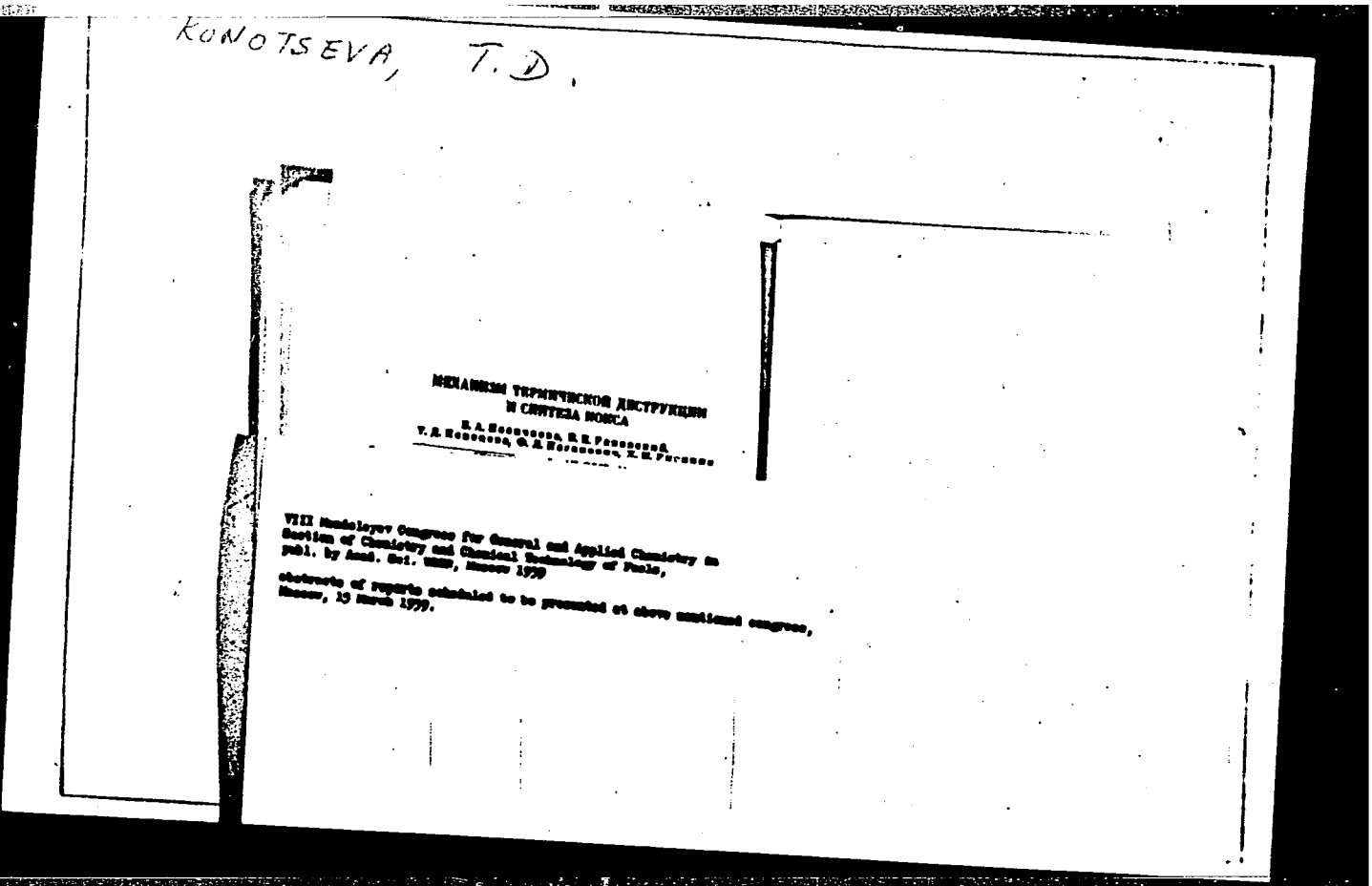
properties and

radiation grafting

polymers were

Card 1/2

KONOTSEVA, T. D.



МЕХАНИЗМ ТЕРМИЧЕСКОЙ ДЕСТРУКЦИИ
И СИНТЕЗА МОЛСА

[illegible]

VIII Mendeleyev Congress for General and Applied Chemistry in Section of Chemistry and Chemical Technology of Fuels, publ. by Acad. Sci. USSR, Moscow 1959

Abstracts of reports scheduled to be presented at above mentioned congress, Moscow, 19 March 1959.

Konov, A. [illegible] Kurbasin (Hero of the socialist labor of the collective farmers of the grain collective farm'Kurash'", Khlebnikov rayon of Mariysk ASSR), Summary. Moldodst', Book 7, 194[illegible], p. 49-55.

SO: U-3850, 16 June 53, (Letopis 'Zhurnal 'nykh Statey, No. 5, 1949).

KONOV, I.I.; MAKAROV, L.M.

New method for the alignment of the disk spindle axle on internal grinding machines. Podshipnik no.7:31-32 Jl '53. (MLRA 6:8)
(Grinding and polishing)

AUTHORS: Konov, K. I. and Anders, N. R. 94-13-7-8/25

TITLE: An Improved Electric Furnace for High Temperature Reduction of Tungsten by Hydrogen (Usovershenstvovannaya elektropech' dlya vysokotemperaturnogo vosstanovleniya vol'frama vodorodom)

PERIODICAL: Promyshlennaya Energetika, 1958, Vol 13, Nr 7, pp 16-17 (USSR)

ABSTRACT: This suggestion was awarded a fifth premium in an All-Union Power economy competition. Hitherto tungsten was reduced by hydrogen in imported continuous electric muffle furnaces of 33 kW rating operating at 220 V and illustrated in Fig.1. The imput was regulated by hand by means of rheostats. The authors developed and introduced a new continuous high-output furnace illustrated in Fig.2. The furnace was made longer, two tungsten heating muffles were connected in series and shields were constructed to reduce heat losses. The furnace is supplied by three auto-transformers of 380/50 V each of 6 kVA output. Technical data relating to the

Card 1/2

94-13-7-8/25

An Improved Electric Furnace for High Temperature Reduction of Tungsten by Hydrogen

old and new furnaces are compared in a table. There are 2 figures and 1 table.

Card 2/2 1. Electric furnaces - Design 2. Tungsten - Reduction
3. Hydrogen - Applications

KONOV, L.A.

The A801 automatic press with 200-ton capacity. Biul.tekh.-ekron.in-form. no.9:13-15 '60. (MIRA 13:10)
(Power presses)

KONOV, M. N.

Tractors

Year's operation of tractors KT-12 equipped with gas generators TSNIIME - 17., Les. prom., 12, no. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, March, 1952 ~~XXXX~~ 1953, Uncl.

KONOV, N.

Konov, N. Technical documentary of the electric products industry. p.3. ELEKTROENERGIIA. Sofiya. Vol. 6, no. 5, May 1955.

SO: Monthly List of the East European Accessions. (EEAL), LC. Vol. 4, no. 10, Oct. 1955. Uncl.

KONOV, N., inzh.

Current ways of providing current to electrotelphers and electric cranes. Mashinostroene 13 no.9:44-46 S '64.

VODENICHAROV, I.; ILKOV, D.; PATARINSKI, N.; KONOV, T.

Chemical and agrochemical studies of lignite waste. Izv Inst "Nikola Pushkarov" 7:151-169 '63.

KONOV, T.

Differentiated quotas for the obtainment of manure in cooperative farms. Izv Inst "Nikola Pushkarov" no.5:203-223 '62.

KONOV, V., inzh.; SAKHAROV, S., inzh.; SUBBOTIN, I., inzh.; CHEREMNYKH, Ye., inzh.; KARYAKO, B., inzh.; RASSHCHEPKIN, V., inzh.; BORISOVA, T., inzh.; [illegible] D., inzh.; GARMASH, V., inzh.; GOLOVINA, V., inzh.

New developments in building practice. Na stroi. Ros. 4 no.1:7,11,14,18, 26,30 Ja '63. (MIRA 16:3)

(Building—Technological innovations)

KONOV, V.A.

Replacing the casing of a milling machine. TSement 17 no.6: 22 N-D '56. (MLRA 9:8)

1. Sengeleyevskiy tsementvyy zavod.
(Crushing machinery--Maintenance and repair)

90

The Effect of Nuclear Radiation (Cont.) SOV/6176

PURPOSE: This book is intended for personnel concerned with nuclear materials.

COVERAGE: This is a collection of papers presented at the Moscow Conference on the Effect of Nuclear Radiation on Materials, held December 6-10, 1960. The material reflects certain trends in the work being conducted in the Soviet scientific research orginization. Some of the papers are devoted to the experimental study of the effect of neutron irradiation on reactor materials (steel, ferrous alloys, molybdenum, avial, graphite, and nichromes). Others deal with the theory of neutron irradiation effects (physico-chemical transformations, relaxation of internal stresses, internal friction) and changes in the structure and properties of various crystals. Special attention is given to the effect of intense γ-radiation on the electrical, magnetic, and optical properties of metals, dielectrics, and semiconductors.

Card 2/14

S/137/60/000/009/019/029
A006/A001

The Effect of Rare-Earth Elements on the Structure of Fracture and the Structure and Properties of Steel

at a teeming temperature of 1,550°C the addition of 0.3% misch metal to the steel prevents the formation of intergranular fractures of cast steel. There are 7 references.

T.F.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

KONOV, Yu. K., ZINOVYEVA, T. N., KOLODNAYA, B. A. (Engineers), and FRIDLYAND, L. A. (Cand. Tech. Sci.) (Moscow)

"Investigation of processes of joining titanium-aluminum and aluminum--steel" was devoted to a study of the behavior during dynamic loading of constructions, achieved by welding and by rolling and welding by explosion. A technology was developed which involved preliminary hard-facing on titanium of technically pure aluminum AV00 or AV000 either with calorizing or without it. Thickness of the layer of hard-facing is 5--8 mm. Welding is carried out by arc in argon by melted or unmelted electrode. Ultimate strength of joining OT4 with AMg6-11 is 24 kG/mm^2, angle of bend 17./30°.

Report presented at the 1st All-Union Conference on welding of heterogeneous metals, at the Inst of Electric Welding im. Ye. O. Paton, 14-15 June 1963. (Reported in Avtomaticheskaya svarka, Kiev, No. 9, Sept 1963, pp 95-96 author V. R. Ryabov)

JPRS 24,651 19 May 64

L 34668-66 T/EWP(t)/ETI IJP(c) JD

ACC NR: AP6014717 SOURCE CODE: BU/0011/66/019/001/0013/0016

57
B

AUTHOR: Nadzhakov, G.; Konova, A.; Pakeva, S.

ORG: Sofia University, Physics Department (Fizicheskiy fakul'tet, Sofiyskiy Universitet)

TITLE: Photoelectret effect in small cadmium sulfide single crystals 16

SOURCE: Bulgarska akademiya na naukite. Doklady, v. 19, no. 1, 1966, 13-16

TOPIC TAGS: photoelectret, semiconductor research, semiconductor single crystal, cadmium sulfide, dielectric property, single crystal

ABSTRACT: Small cadmium sulfide single crystals dispersed in araldite resin were studied to determine whether a photoelectret effect can be produced in small single crystals as in large ones. The measurement results show that 1) one part CdS to three parts resin is the most effective ratio, 2) the permanent polarization varies from sample to sample depending on the ratio of CdS to resin, 3) photo-polarization saturation depends on polarization time regardless of illumination intensity and is characteristic of the given sample, 4) the reciprocity law holds for an extensive region which increases with the percent content of resin to CdS, and

Card 1/2

L 34668-66

ACC NR: AP6014717

5) all the samples have a heterocharge and the photopolarization values do not depend on the voltage polarity. The results lead to the conclusion that the photoelecret effect can be produced in small single crystals as in large single crystals but that the materials employed must have a high dark specific resistance. Orig. art. has: 4 figures and 1 table.

SUB CODE: 20/ SUBM DATE: 21Sep65/ ORIG REF: 001/ SOV REF: 007/

Card 2/2

L 36027-66 T/EWP(t)/ETI IJP(c) JD

ACC NR: AP6027347 SOURCE CODE: BU/0011/65/018/012/1087/1090

49
B

AUTHOR: Nadzhakov, G.; Antonov, A.; Pakova, S.; Konova, A.

ORG: none

TITLE: Conservation of the homocharge during the dark polarization of sulfur monocrystals

SOURCE: Bulgarska akademiya na naukite. Doklady, v. 18, no. 12, 1965, 1087-1090

TOPIC TAGS: dielectric polarization, photoelectret, electric field, single crystal

ABSTRACT: The creation of photoelectret states within dielectrics is accompanied by dark polarization, i.e., polarization in darkness by means of applied electric fields. During such polarization the surface may acquire hetero- as well as homocharges. G. Nadzhakov et al. (Dokl. BAN, 15, 1962, no. 8, 805) assumed earlier that the applied high voltage causes the ions within the dielectric to be absorbed. The present investigation studied, consequently, in more detail, the creation and decay (in time) of the homocharge during dark polarization of sulfur monocrystals. Diagrams present the time dependence of the polarization, depolarization, and homocharge decay with the applied voltage (1-5 kV) as parameter. The paper ends with a brief discussion of the results. Orig. art. has: 4 figures. [JPRS: 36,465]

SUB CODE: 09, 20 / SUBM DATE: 21Sep65 / ORIG REF: 003 / SOV REF: 003
OTH REF: 002

Card 1/1 MLP

NADZHAKOV, G.; ANTONOV, A.; ZADAROZHNYY, G. [Zadarozhnii, G.]; KONOVA, A.; PAKEVA, S.; YUSKESELIYEVA, L. [IUskeseliieva, L.].

A new type of two-layer electret. Doklady BAN 17 no.4:365-368 '64.

NACHEV, L.; KONOVA, I.; GESHEVA, R.

Biosynthesis of vitamin B 12 by actinomycetes cultured on solid media. Izv. mikrobiol. inst. (Sofiia) 16:207-212 '64

C 4 KONOVA, I.V.

Influence of aeration intensity on autotrophic and heterotrophic nutrition of Chlorella. I. L. Rabotnova and I. V. Konova (People's Univ., Moscow). *Mikrobiologiya* 19, 24-31(1950).—Cultures of *Chlorella vulgaris* (I) grow far better on mash than on prepd. sugar mediums. The optimum concn. is 1-2° Balling. Under anaerobic conditions at p_H 13-18 I lives but does not proliferate; when acidified to p_H 10-28, it proliferates. In nutrition I passes from heterotrophism at low p_H through a heterotrophic-autotrophic stage at medium p_H to a chiefly prototrophic (photosynthesis) stage at high p_H. J. F. S.

KONOVA, I. V.

"The Metabolism of a Representative Group of Actinomyces Griseus in Relation to Antibiotic Activity." Cand Biol Sci, Inst of Microbiology, Acad Sci USSR, 29 Dec 54. (VM, 21 Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556 24 Jun 55

IYERUSALIMSKIY, N.D.; KONOVA, I.V.; MERONOVA, N.M.

Determining vitamins and antibiotics by diffusion into agar. Report No. 1: Simplified computations for the dish method. Mikrobiologiia 28 no.3:433-443 My-Je '59. (MIRA 13:3)

1. Institut mikrobiologii AN SSSR.
(VITAMINS, determ.
simplified computations for cup method (Rus))
(ANTIBIOTICS, determ.
same)

KONOVA, I.V.; NERONOVA, N.M.; IYERUSALIMSKIY, N.D.; BORISOVA, A.I.

Determining vitamins and antibiotics by diffusion into agar. Report No.2: Quantitative determination of vitamin B_{12} and its derivatives by paper chromatography. Mikrobiologiia 28 no.4:490-494 Jl-Ag '59. (MIRA 12:12)

1. Institut mikrobiologii AN SSSR.
(VITAMIN B_{12} chem.)
(ESCHERICHIA COLI)

17 (4)
AUTHOR: Konova, I. V. SOV/20-126-3-59/69

TITLE: Physico-chemical Indices of the Medium (pH, Eh, rH_2) in the Development of Actinomyces Griseus and Its Production of Antibiotic Substance (Fiziko-khimicheskiye pokazateli sredy (pH, Eh, rH_2) pri razvitii Actinomyces griseus i obrazovanii im antibioticheskogo veshchestva)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 3, pp 671 - 674 (USSR)

ABSTRACT: It is known that the activity of the microorganism species proceeds within a certain rigid physico-chemical framework. The 3 indices mentioned in the title are the most important factors which determine the degree of usefulness of one or the other medium for the development of various microorganisms: active acidity and redox conditions of the medium as they are indicated by symbols in the title. I) Although most Actinomycetes (Ref 1) grow between pH 5 - 9, there are, however, species the useful zone of which lies between pH 4.2 and 11. The process of the change of the pH-values is finally caused by specific properties of the metabolism of the bred organism and by the

Card 1/3

composition of its culture medium. The medium is among other things sometimes acidified, the alkaline pH-initial value is not able to prevent this (Refs 5,9). The author investigated the change of the active acidity during the development of Actinomyces griseus and during the production of the antibiotic in culture media with 10 different pH-initial values (4.23 - 8.69). The obtained results are given in the figures 1 and 2. They show that pH 4.23 (initial value) does no more belong to the medium acidity favorable for the Actinomycetes. It is obvious that this organism actively regulates the pH-value of the medium. It secures thus conditions for the processes of metabolism among these also for the production of the antibiotic. II) A certain dependence exists between the amount of the redox potential of the medium and the vital activity of an organism bred with respect to this. Data given on this in the publications are rare (Refs 3,8). From the author's experiments it is concluded that Actinomyces griseus grows in a medium with rH_2 19 - 28 under the conditions of the depth

culture (glubinnoye vyrashchivaniye). The highest antibiotic activity was detected in the case of a reduced redox potential. There are 3 figures, 1 table, and 9 references, 4 of which are Soviet.

ASSOCIATION: Institut mikrobiologii Akademii nauk SSSR (Institute of Microbiology of the Academy of Sciences, USSR)

PRESENTED: February 23, 1959, by V. N. Shaposhnikov, Academician

SUBMITTED: September 6, 1958

SKRYABIN, G.K.; KONOVA, I.V.; KOKHLOVA, Yu.M.

International symposium on antibiotics. Mikrobiologiia 29 no.1: 154-157 Ja-F '60. (MIRA 13:5)
(ANTIBIOTICS--CONGRESSES)

IYERUSALIMSKIY, N.D.; KONOVA, I.V.; NERONOVA, N.M.; ANCHUROVA, A.I.

Determination of vitamin B_{12} by the bioautographic method. Vit. res. i ikh isp. no.5:119-132 '61. (MIRA 15:1)

1. Institut mikrobiologii AN SSSR, Moskva.
(CYANOCOBALAMINE) (BIOLOGICAL ASSAY)

KONOVA, I.V.; BORISOVA, A.I.

Production of vitamin B_{12} by Act. olivaceus on a synthetic medium. Mikrobiologiia 30 no.1:27-34 Ja-F '61. (MIRA 14:5)
(ACTINOMYCES) (CYANOCOBALAMINE)

KONOVA, I.V.; FATEYEVA, M.V.; IYERUSALIMSKIY, N.D.

First International Symposium in Italy. Mikrobiologiia 30 no.2: 371-374 Mr-Ap '61. (MIRA 14:6)
(FERMENTATION—CONGRESSES)

SHALOSHNIKOV, V.N.; KONOVA, I.V.; LISENKO, L.I.

Possible use of acetone-butyl mash for the production of vitamin B_{12} from Act. olivaceus. Mikrobiologiia 31 no.4:716-719 Jl-Ag '62 (MIRA 18:3)

1. Institut mikrobiologii AN SSSR.

KONOVA, I.V.

Defense of theses. Mikrobiologiia 31 no.4:763-764 Jl-Ag '62.
(MIRA 18:3)

KONOVA, I.V.

Defense of dissertations. Mikrobiologiia 31 no.6:1139-1141 N-D '62. (MIRA 16:3)

(MICROBIOLOGY)

KONOVA, I.V.

Defense of dissertations. Mikrobiologiia 32 no.2:381 Mr-Ap '63. (MIRA 17:9)

SHAPOSHNIKOV, V.N.; KONOVA, I.V.; BORISOVA, A.I.

Vitamin B_{12} synthesis by Actinomyces olivaceus in a synthetic medium in the presence of 5,6-dimethyl benzimidazole. Mikrobiologiia 32 no.4:598-602 Jl-Ag '63. (MIRA 17:6)

1. Institut mikrobiologii AN SSSR.

LISENKOVA, L.L.; KONOVA, I.V.

Methods of vitamin B_{12} assay by a diffusion method using Escherichia coli 113-3. Mikrobiologiia 32 no.5:885-890 S-O'63 (MIRA 17:2)

1. Institut mikrobiologii AN SSSR.

KONOVA, I.V.; LISENKOVA, L.L.

Biosynthesis of vitamins of the B_{12} group by Actinomyces olivaceus on a synthetic medium. Izv. AN SSSR. Ser. biol. no.5:760-761 S-O '65. (MIRA 18:9)

1. Institut mikrobiologii AN SSSR, Moskva.

KONOVA, I.V.; NACHEV, L.; GESHEVA, R.

Production of vitamin B_{12} by Actinomyces, grown on solid media of various composition. Mikrobiologiia 34 no.3:528-532 My-Je '65. (MIRA 18:11)

1. Institut mikrobiologii AN SSSR.

KONOVA, K. P.

"Concerning Active Immunization Against Measles by a Dry-Virus-Vaccine Produced from a Chick Embryo" Proceedings of Inst. Epidem and Microbiol im. Gamaleya 1954-56.

Other Personnel Identified as Participants in Sessions of the Institute's Scientific Council Held During 1955. Inst. Epidem and Microbiol im. Gamaleya AMS USSR

SO: Sum 1186, 11 Jan 57.

KONOVA, K.P.

Comparative study of the biological activity of staphylococci strains of various origins. Zhur. mikrobiol., epid. i immun. 41 no.9:117-123 S '64. (MIRA 18:4)

1. Institut epidemiologii i mikrobiologii imeni Gamalei AMN SSSR.

KONOVA, K.P.

Determination of staphylococcal hemolysins by the technique of hemolysis neutralization with antistaphylococcal sera on agar plates. Zhur.mikrobiol., epid. i immun. 42 no.2:110-115 F '65. (MIRA 18:6)

1. Institut epidemiologii i mikrobiologii imeni Gamalei AMN SSSR.

KONOVA, L.

Case of spontaneous rupture of the uterus in pregnancy. Khirurgiia Sofia 8 no.3:284-285 1955.

(PREGNANCY, complications,
uterus rupture, spontaneous)
(UTERUS, rupture,
in pregn. spontaneous)

NIKOLOV, N.; RAICHEV, R.; KONOVA, L.; GEORGIEVA, M.

Two cases of Brenner tumor. Khirurgiia, Sofia 9 no.3: 272-274 1956.

(BRENNER TUMOR, case reports (Bul))
(OVARIES, neoplasms, Brenner tumor, case reports (Bul))

KONOVA, I.; MINCHEVA, M.

Trichlorethylene anesthesia in labor. Akush. ginek. (Sofiia) 3 no.6:59-64 '64.

CATEGORY : Cultivated Plants. Fodder Grasses. Root Crops. M

ABS. JOUR. : RZhBiol., No. 3, 1959, No. 10985

AUTHOR : Konova, L.
INST. : Knezh (Bulgaria) Scientific Research Agricultural Inst.
TITLE : A Study of the Grass Mixtures of Perennial Grasses with a Short Period of Utilization.

IG. PUB. : Nauchni tr. M-vo zemed. i gorite. Ser. rastenivev"dstvo, 1958, 3, No. 1, 23-36

ABSTRACT : A study of the productivity of various grass mixtures when sown on typical chernozem was conducted at the Scientific Research Agricultural Institute in Knezh (Bulgaria) during 1952-1956. Sown on the plots were: tall oat-grass and Italian rye-grass (Lolium multiflorum), awnless brome grass and cocksfoot (Dactylis glomerata), red clover, alfalfa and esparcet. In the simple (binary) mixtures, the ratio of the legumes and cereals was 50:50 and in the compound mixtures - 60:40. Botanical analysis of the hay and the identification of the root residues

CARD: 1/2

mixtures a higher rate of sowing for leguminous grasses than for cereals. — V. S. Shmal'ko

CARD: 2/2

KONOVA, L.; IVANOVA, Khr.; ZOGRAFSKI, P.

Delivery of premature infants with the aid of a speculum.
Suvr. med. 13 no.3:24-30 '62.

1. Iz Purvi rodilen dom "Tina Kirkova" - Sofiia (Glaven lekar St. Iliev) Nauchno-izsledovatelski institut po akusherstvo i ginekologiia (Direktor dots. Br. Papazov).
(INFANT, PREMATURE) (DELIVERY)

GERASIMENKO, G.; KONOVA, T.

Role of credit in the organization of working capital. Den. i kred. 20 no.1:14-20 Ja '62. (MIRA 15:1)
(Rostov Province--Machinery industry--Finance)
(Gorkiy Province--Machinery industry--Finance)

KONOVAL'CHIKOV, G.D.; SMOLENSKAYA, K.S.

Complicated retrobulbar neuritis. Zdrav. Belor. 6 no. 10:62 O '60.
(MIRA 13:10)

1. Iz otolaringologicheskogo i glaznogo otdeleniy oblastnoy bol'nitsy, g. Vileyka.
(OPTIC NERVE--DISEASES)

KONOVAL'CHIKOV, G.D.

Diagnostic value of determining the C-reactive protein of the blood serum in chronic sinusitis. Zhur. ush., nos. i gor. bol. 24 no.1:73-75 Ja-F '64. (MIRA 18:3)

1. Iz kliniki bolezney ukha, gorla i nosa (dir. - zasluzhennyy deyatel' nauki prof. A.G. Likhachev) I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova.

Konovalchikov, L. D

6

Condensation of isobutenylmagnesium chloride with carbonyl compounds and tertiary amines. A. D. Petrov, V. L. Sushchinskii, and L. D. Konovalchikov (D. I. Mendeleev Chem. Technol. Inst., Moscow). *Zhur. Obshchei Khim.* 25, 1868–71(1955).—To 73 g. Mg under Et_2O there was added a little CH_2:$CMeCH_2Cl$, (I), and when the reaction had commenced, a soln. of 226.5 g. I and 74 g. AcOMe in 1.5 l. Et_2O was added over 10 hrs.; distn. gave 63% tertiary alc., $C_6H_{12}O$, b_{15} 90–1°, n_D^{20} 1.4580, d_{20} 0.8568, which hydrogenated over Raney Ni at 130° and 160 atm. to the alc. $C_6H_{14}O$, b_{14} 86–7°, n_D^{20} 1.4322, d_{20} 0.8252, which treated with HCl at 70° gave the chloride $C_6H_{13}Cl$, b_{11} 72–3°, n_D^{20} 1.4355, d_{20} 0.8677, which was identified as *4-chloro-2,4,6-trimethylheptane*. This (35.4 g.) and 27.18 g. I treated with 8 g. Mg yielded as a main product (42%) of an *olefin*, b_{11} 94–5°, n_D^{20} 1.4490, d_{20} 0.8004, which hydrogenated to *2,4,6-trimethyl-4-isobutylheptane*, b_{12} 108–9°, n_D^{20} 1.4352, d_{20} 0.7812. Treatment of I and pinacoline with Mg (73 g.) run as above, gave 142 g. *2,2,3,5-tetramethyl-4-hexen-3-ol*, b_6 46°, n_D^{20} 1.4502, d_{20} 0.8514 (oxidation of this gave Me_2CO and a hydroxy acid, m. 141° (cf. *C.A.* 49, 10855e)) which treated with HCl at 0° gave but 0.5% yield of the *corresponding chloride* and 80% *dichloride*, n_D^{20} 1.4710, d_{20} 1.023; hydrogenation of the *alc.* gave the *satd. analog*, b_{11} 84.6–4.8°, n_D^{20} 1.4368, d_{20} 0.8393, identified as *2,2,3,5-tetramethyl-3-hexanol*, which treated with HCl at 0° gave the corresponding *chloride*, b_{22} 72.6–3.5°, n_D^{20} 1.4455, d_{20} 0.87–78. This (53.6 g.) and 60.55 g. I with 43.6 g. Mg gave 36% *olefin*, $C_{14}H_{28}$, b_{11} 92.5°, n_D^{20} 1.4541, d_{20} 0.8163, which hydrogenated to *2,4,6-trimethyl-4-tert-butylheptane*, b_{11} 105.5–6°, n_D^{20} 1.4460, d_{20} 0.7905. Treatment of 36 g. 2,2,3,3-tetramethyl-3-chloropropane with 13 g. Mg and 36.2 g. I gave 2.8 g. *olefin*, b_8 45–7°, n_D^{20} 1.4380, d_{20} 0.7743, which hydrogenated to *2,2,3,3,5-pentamethylhexane*, b_{10} 172–3°, n_D^{20} 1.4260, d_{20} 0.7621. 2,2,3,5-Tetramethyl-3-chlorohexane, 61.22 g. CH_2:$CHCH_2Cl$ and 24 g. Mg gave an *olefin* (27.2 g.) b_6 66–8°, n_D^{20} 1.4521, d_{20} 0.8034, which hydrogenated to *2,4-dimethyl-4-tert-butylheptane* (II), b_{10} 135–40°, n_D^{20} 1.4416, d_{20} 0.7934. II was also prepd. as follows: *2,2,3-trimethyl-3-hexanol* (b_{22} 87°, n_D^{20} 1.4370, d_{20} 0.8463, prepd. by hydrogenation of 2,2,3-trimethyl-5-hexen-3-ol) was treated with HCl at 0° yielding the *chloride*, n_D^{20} 1.4485, d_{20} 0.9010; this condensed with I in the presence of Mg, as above, to 20% *olefin*, b_4 72–3°, n_D^{20} 1.4523, d_{20} 0.8355, which hydrogenated to II, b_{12} 129–30°, n_D^{20} 1.4422, d_{20} 0.7961. Reaction of 226 g. I, 102 g. iso-$PrCO_2Me$ and 73 g. Mg gave 102 g. *alc.*, $C_{11}H_{22}O$, b_{10} 99.5°, n_D^{20} 1.4637, d_{20} 0.8698, which dehydrated with iodine gave *2,6-dimethyl-4-isopropylidene-1,6-heptadiene*, b_1 42°, n_D^{20} 1.4768, d_{20} 0.8153 (oxidation gave Me_2CO and diacetylacetone, m. 48°, whose diphenylhy-

(2)

VAYNSHTEYN, B.P.; KRUGLIKOV, V.Ya.; RAPOPORT, I.B.; VASIL'YEVA, Z.A.; KAGAN, L.Kh.; PLOKHINSKAYA, Ye.A.; VOLYNSKIY, A.V.; MUZOVSKIY, V.V.; KLEVTSOVA, V.P.; Prinimali uchastiye: MICHAN, A.I.; KONOVAL'CHIKOV, L.D.; AYNSHTEYN, V.G.; KVASHA, V.B.; CHELYANOVA, D.P.; ZAYTSEVA, A.F.; ANDREYEVA, T.A.

New way to synthesize oxygen compounds from carbon monoxide and hydrogen over iron-copper catalysts. Trudy VNII NP no. 9:177-196 '63. (MIRA 17:6)

KONOVAL'CHIKOV, O.D.; GALICH, P.N.; MUSIYENKO, V.P.; SKARCHENKO, V.K.; PETROV, A.A.

Effect of the porous structure of an alumina-chromium oxide catalyst on the conversion of n-hexane. Kin. i kat. 5 no.2: 350-354 Mr-Ap '64. (MIRA 17:8)

1. Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR.

KONOVAL'CHIKOV, O.D.; GALICH, P.N.; PETROV, A.A.; SKARCHENKO, V.K.

Dehydrogenation of n-hexane on activated carbon and Cr_2O_3-coal catalysts. Kin. i kat. 5 no.3:561-563 My-Je '64. (MIRA 17:11)

1. Institut khimii polimerov i monomerov AN UkrSSR.

IL'IN, N.A.; SERGEYEVA, Ye.S.; KONOVAL'CHUK, M.Ya., tekhnik

System for a defectless production of goods. Tekst. prom. 25 no.5:4-6 My '65. (MIRA 18:5)

1. Direktor Bryanskogo kamvol'nogo kombinata (for Il'in).
2. Nachal'nik otdela truda i zarabotnoy platy Bryanskogo kamvol'nogo kombinata (for Sergeyeva).

KONOVAL'CHUK, M.Ya., tekhnik

Technological study room as progress promoter. Tekst. prom. 25 no.10:81 O '65. (MIRA 18:10)

1. Byuro tekhnicheskoy informatsii Bryanskogo kamvol'nogo kombinata.

SEREBRYAKOV, R.V.; DALIN, M.A.; KONOVAL'CHUKOV, A.G.

Some regularities in the reaction of cyanoethylation of hydrocyanic acid. Dokl. AN Azerb. SSR 19 no.11:31-34 '63. (MIRA 17:3)

1. BNIIolefin.

L 52174-65 EWT(m)/EPF(c)/EPR/EWP(j)/T/EWA(c) Pc-4/Pr-4/Ps-4 RPL WW/RM

ACCESSION NR: AP5015484 UR/0286/65/000/008/0018/0019
547.239.2

AUTHOR: Serebryakov, B. R.; Konoval'chukov, A. G. 29 B

TITLE: A method for producing succinic acid dinitrile. [16] Class 12, No. 170050

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 8, 1965, 19

TOPIC TAGS: succinic acid, amber, lignite, diacid, dinitrile

ABSTRACT: This Author's Certificate introduces a method for producing succinic acid dinitrile by cyanoethylation of hydrogen cyanide with acrylonitrile at 20-70°C in the presence of an alkali catalyst. The process is simplified by using ion-exchange resins which are insoluble in the reagent solution as the catalyst, e.g. EDE-10P anion exchanger in the sodium or potassium form.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy tekhnologicheskiy institut po polucheniyu i perepabotke nizkomolekulyarnykh olefinov (All-Union Technological Scientific Research Institute for Producing and Processing Low-Molecular Olefins)

SUBMITTED: 31Jul64 ENCL: 00 SUB CODE: MT, GC

NO REF SOV: 000 OTHER: 000

Card 1/1

MURASHKIN, O., inzh.; KONOVALENAK, A., inzh.

English language for ship engineers. Mor. flot 23 no.9:44 S '63. (MIRA 16:11)

KONOVALENKO, A., stalevar

About his comrades. Metallurg 9 no.7:22-23 Jl '64.
(MIRA 17:8)

KONOVALENKO, A.F.

Some features of the installation of precast concrete sections of the No.3 shore pumping station. Energ. stroi. no.37: 58-60 '63. (MIRA 17:6)

1. Starshiy prizvoditel' rabot montazhnogo uchastka tresta "Yuzhenergomontazh."

RYVKIN, S.; KONOVALENKO, B.

Photodiode from junction transistor. Radio no.2:41 F '58.
(Photoelectric cells) (MIRA 11:2)

obtained in this way should not be used under conditions of increased humidity.

1. Diodes--Design 2. Transistors--Applications

Card 1/1

KONOVALENKO, B. M.
USSR/Physics - Conductivity of CdS

FD-997

Card 1/1 : Pub. 153 - 1/24

Authors : Ryvkin, S. M.; Konovalenko, B. M.; and Smetannikova, Yu. S.

Title : Dependence of conductivity induced in layers and single-crystals of cadmium sulfide upon energy of exciting electrons

Periodical : Zhur. tekh fiz., 24, No. 6, 961-977, Jun 1954

Abstract : Present results of an investigation into the non-equilibrial (induced) conductivity in CdS layers that arises under the action of bombarding electrons with energies 2 to 30 kev. Show that, with decreasing energy of exciting electrons from 10 kev and lower, a sharp drop occurs in the "transverse" induced conductivity relative to unit energy incident on the specimen. This drop is explained by the decrease in depth of penetration of the electrons into the substance. An analogy exists between this drop in induced conductivity and the drop in photo-conductivity in the depth of the particular zone of light absorption. Acknowledge advice of D. N. Nasledov. Twelve references: 7 USSR (L. G. Paritskiy, B. M. Angelov, S. V. Starodubtsev, V. P. Zhuze, V. A. Arkhangel'skaya, A. M. Bonch-Bruyevich, S. M. Ryvkim).

Institution : -

Submitted : February 8, 1954

USSR/Physics - Photodiodes FD-2398

Card 1/1 Pub. 153-2/21

Author : Alferov, Zh. I.; Konovalenko, B. M.; Ryvkin, S. M.; Tuchkevich, V. M.; and Uvarov, A. I.

Title : Flat germanium photodiodes

Periodical : Zhur. tekh. fiz. 25, 11-17, Jan 1955

Abstract : The authors describe the principal properties of germanium photodiodes of unique design and free from the usual deficiencies. In this design the illuminated area is not limited by the length of the diffusion displacement and can reach very large sizes corresponding to the total area of the n-p transition. They conclude: the germanium photodiode is a photocell valve to which considerable voltages can be applied in the closed direction; the sensitivity of the photodiode is about 300 times that of photocells with external photoeffect; the proper time of germanium photodiodes studied is about $1/10^5$ second, and can be decreased by decrease of the thickness of the n-germanium layer; the characteristics are very stable and free of "fatigue". Deficiencies are considerable temperature dependence of the dark current. The authors thank D. N. Nasledov, N. V. Shchetinina, and L. P. Bogomazov. Three references, including one USSR (S. M. Ryvkin, same issue, p. 21).

Institution: --

Submitted : October 13, 1954

FD-2399

USSR/Physics - Photodiodes

Card 1/1 Pub. 153-3/21

Author : Konovalenko, B. M.; Ryvkin, S. M.; and Tuchkevich, V. M.

Title : Sensitivity of germanium photodiodes to x-rays

Periodical : Zhur. tekh. fiz. 25, 18-20, Jan 1955

Abstract : Numerous attempts have been made to utilize photocell valves as dosimeters of x-rays (e.g. V. M. Tuchkevich, Phys. ZS d. Sow. 5, 1934 and 7, 1935; I. M. Polyak and M. N. D'yachenko, ZhTF 22, 1952), but without practical results in consequence principally of the insufficient sensitivity. Recently a new type has been investigated, namely the germanium photodiode (same issue, p. 11; see preceding abstract). In the present article the authors expound certain results of their efforts on this problem; namely, they compare the sensitivity of germanium photodiodes and certain photocell valves under various conditions. They point to the possibility of the practical utilization of n-p transitions in germanium as dosimeters of intense x-rays (e.g. direct radiation). They thank D. N. Nasledov and N. I. Dodon.. Six references: e.g. I. Shive, JOSA, 43, 1953; [illegible]

Institution: --

Submitted : October 13, 1954

Konovalenko, B. M

Chem 4

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537.312.5

5988. PHOTOELECTRIC CHARACTERISTICS OF SOME COMPOUNDS WITH THE STRUCTURE OF ZINC BLENDE. N.A.Goryunova, V.S.Grigor'eva, B.M.Konovalenko and S.M.Ryvkin.

Zh. tekh. Fiz., Vol. 25, No. 10, 1675-82 (1955). In Russian.

All the compounds investigated, viz. Ga_2Se_3, Ga_2Te_3, $Ga_2Te_3.ZnTe$, $Ga_2Te_3.3ZnTe$, $Ga_2Te_3.9ZnTe$, β-Ga_2S_3, GaSe, GaTe, are semiconductors and are photosensitive. On transition from one substance to another of the same structural type the long-wave limit of the photoconductivity shifts in a regular way and, therefore, also the energy interval corresponding to the width of the prohibited zone. The more prevalent ionic character of the bond explains the phenomena.

Electrical Research Association

PM

RYVKIN, S. M., KONOVALENKO, B. M.

57-27-7-30/40

AUTHORS: Ryvkin, S. M., Bogomazov, A. P., Konovalenko, B. M., Matveyev, O. A.

TITLE: A Semiconductor Transmitter for Gamma-Ray Indication (Poluprovodnikovyy datchik dlya indikatsii gamma-izlucheniya).

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1957, Vol. 27, Nr 7, pp. 1601-1602 (USSR)

ABSTRACT: As there exists a great want of cheap and simple devices, particularly of gamma-ray indicators, and as promising results were obtained in this respect with semiconductor-materials, such as CdS and CdSe, whose conductivity substantially changes upon irradiation, the investigations were here performed in this direction. In Zhurnal Tekhnicheskoy Fiziki, 1954, Vol. 24, p. 961 the authors showed that semicrystalline layers may form upon sublimation of CdS powder. The high temperature of the base, however, leads to the diffusion of the base-substance into the CdS-layer by which fact its properties with regard to sensitivity in the case of irradiation are greatly deteriorated. This difficulty was now overcome at the expense of a great increase in the speed of sublimation.

Card 1/2

24(4) PHASE I BOOK EXPLOITATION SOV/3140

Akademiya nauk Ukrainskoy SSR. Institut fiziki

Fotoelektricheskiye i opticheskiye yavleniya v poluprovodnikakh; trudy pervogo vsesoyuznogo soveshchaniya po fotoelektricheskim i opticheskim yavleniyam v poluprovodnikakh, g. Kiyev, 20-26 noyabrya 1957 g (Photoelectric and Optical Phenomena in Semiconductors; Transactions of the First Conference on Photoelectric and Optical Phenomena in Semiconductors...) Kiyev, 1959. 403 p. 4,000 copies printed.

Additional Sponsoring Agency: Akademiya nauk SSSR. Prezidium. Komissiya po poluprovodnikam.

Ed. of Publishing House: I. V. Kisina; Tech. Ed.: A. A. Matveychuk; Resp. Ed.: V. Ye. Lashkarev, Academician, Ukrainian SSR, Academy of Sciences.

PURPOSE: This book is intended for scientists in the field of semiconductor physics, solid state spectroscopy, and semiconductor devices. The collection will be useful to advanced students in universities and institutes of higher technical training specializing in the physics and technical application of semiconductors.

COVERAGE: The collection contains reports and information bulletins (the latter are indicated by asterisks) read at the First All-Union Conference on Optical and Photoelectric Phenomena in Semiconductors. A wide scope of problems in semiconductor physics and technology are considered: photoconductivity, photoelectromotive forces, optical properties, photoelectric cells and photoresistors, the actions of hard and corpuscular radiations, the properties of thin films and complex semiconductor systems, etc. The materials were prepared for publication by E. I. Rashboy, O. V. Snitko, K. B. Tolpygo, A. P. Lubchenko, and M. K. Sheynkman. References and discussion follow each article.

Konovalenko, B. M.

Photoelectric and Optical Phenomena (Cont.) SOV/3140

Card 15/16

~~24 (6)~~ 24,7700

66287

AUTHORS: Ryvkin, S. M., Konovalenko, B. M. SOV/181-1-11-22/27

TITLE: On the Dependence of Induced Conductivity of Cadmium Sulfide on the Energy of the Exciting Electrons

PERIODICAL: Fizika tverdogo tela, 1959, Vol 1, Nr 11, pp 1757-1761 (USSR)

ABSTRACT: According to reference 1 it was jointly established with Yu. S. Smetannikova that for 2 to 30 kev electrons with increasing electron energies, but with a total electron current intensity, which remains at the same level, the induced conductivity of the CdS reaches a saturation value, i.e. that this does not increase any more starting from a certain electron energy. The initial point of the "saturation" is not identical for different samples. Additional investigations (Ref 2) established that with small electron energies the decrease of the induced conductivity is related to the fact that the electrons do not deeply penetrate into the crystals and therefore the recombination processes occurring on the surface of the crystals have an increasingly important influence. Other authors (Ref 3) carried out similar investigations on "voluminous" mono-crystals with 30 to 60 kev-electrons. Their measuring results

Card 1/2

9.4300 (3203, 1043, 1143)
26.2532

S/089/60/009/005/010/020
B006/B070

AUTHORS: Konovalenko, B. M., Ryvkin, S. M., Yaroshetskiy, I. D., Bogomazov, L. P.

TITLE: An Apparatus for Studying the Effect of Gamma Radiation on Semiconductor Materials

PERIODICAL: Atomnaya energiya, 1960, Vol. 9, No. 5, pp. 408 - 409

TEXT: In the present "Letter to the Editor", a cobalt apparatus for the study of the effect of gamma radiation on the electrical properties of semiconductors is described. The apparatus was developed in 1958 by the Fiziko-tekhnicheskiy institut AN SSSR (Institute of Physics and Technology of the AS USSR). The principal use of the apparatus is in the production of defects that are constant in time. To obtain enough defects, fluxes of 10^{11} $cm^{-2}sec^{-1}$ are required. Fig.1 gives a schematic representation of the apparatus; Fig.2 shows the experimental chamber. Both are described in detail. The dose rate was measured at different points of the chamber, and some of the results are given in a Table. The highest dose rate of 128 r/sec was found at the center of

Card 1/3

An Apparatus for Studying the Effect of Gamma Radiation on Semiconductor Materials

S/089/60/009/005/010/020
B006/B070

the chamber floor; 10 mm above the floor it was only 72 r/sec; 20 mm above, 43 r/sec, and 40 mm above, 22 r/sec (all values refer to the center of the chamber). There were no disturbances during the experiment, the work was satisfactory in all respects. L. V. Maslova is thanked for help in measuring the field of gamma radiation. There are 2 figures, 1 table, and 2 Soviet references.

SUBMITTED: April 6, 1960

Legend to Fig.1: Scheme of the apparatus: 1 - Co^{60} standard source; activity: 400 g-equ.Ra; 2 - iron tank, 2.9 m high, filled completely with water. Base: 2.5 × 0.6 m^2; wall thickness: 5 mm; 4 - copper tube 125 mm wide on the inside; 5 - chamber with the sample.

Fig.1

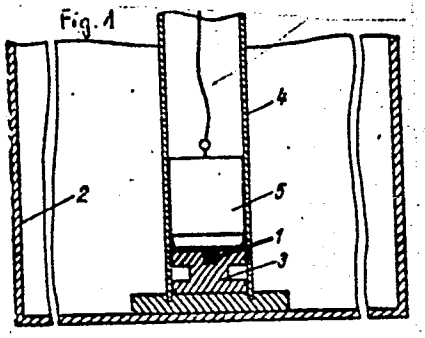

Fig.1'

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B006/B070

Fig. 2

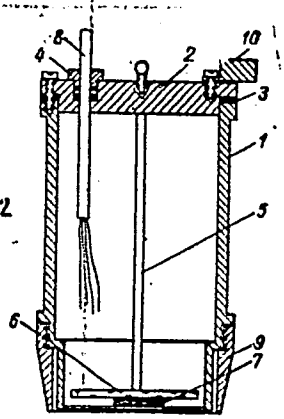

Fig. 2

Legend to Fig.2:
Scheme of the sample chamber. 1 - measuring vessel; 2 - cover; 3 - rubber ring; 4 - hermetically closable opening through which a cable (8) is introduced for the measurement of the electrical parameters of the irradiated samples; 5 - two supports; 6 - holder for the sample (7) made of asbestos cement; 9 - conical insert; 10 - guide box.

Card 3/3

34228
S/181/62/004/002/011/051
B102/B138

24,7700 (1035,1043,1985)

AUTHORS: Konovalenko, B. M., Ryvkin, S. M., and Yaroshetskiy, I. D.

TITLE: Radiation defects caused by fast electrons in n-type germanium

PERIODICAL: Fizika tverdogo tela, v. 4, no. 2, 1962, 379-382

TEXT: The concentration M of radiation defects, the number l of the defect levels and their energies were determined for n-type Ge ($\sim$1 ohm·cm, $n \simeq 2 \cdot 10^{15}$ cm^{-3}) which was irradiated by 2.5-Mev electrons. The electron current density was ~ 5 $\mu a/cm^2$, pulse duration was ~ 2 μsec and repetition frequency was 50 sec^{-1}. The samples ($8 \cdot 1 \cdot 1$ mm^3) were water-cooled. The electron energy behind the specimens was $\sim$1.5 Mev, so that for calculations the electron energy in the specimen was taken to be $\sim$2 Mev. Carrier concentration was determined by measuring the Hall constant between 77°K and room temperature. M and l were determined using the relations: $n_2 = N_d - Ml_1$ and $n_4 = N_d - M(l-1)$; n_2 is the electron

Card 1/3

Radiation defects caused by fast...

concentration in the conduction band at low temperatures, when all defect levels are filled up and all donor levels are completely ionized (section I in Fig. 1). At high temperatures, when the upper defect levels are completely ionized, n_4 is the electron concentration (section II in Fig. 1). M was also determined from the activation energy of the upper levels and the carrier concentration of the linear part of II, using the relation $n-n_2 = \sqrt{MN_c}\exp(-\Delta E_M/2kT)$. N_c was calculated for the effective mass $m_n^* = 0.25\ m_o$. For several different specimens, the following results were obtained: N_d was $(2.08-2.26)\cdot10^{15}$ cm^{-3}, M1 was $(1.65-2.03)\cdot10^{15}$cm^{-3}, M was $(4.25-5.2)\cdot10^{14}$ cm^{-3}, 1 was 3.9 - 4.2, ΔE_M 0.20 - 0.23 ev, and the radiation defect formation cross section was 1.45-1.55 barn; it was calculated from $\sigma = M/\phi N_{Ge}$, ϕ - electron flux density, N_{Ge} - number of Ge atoms per cm^3. Electrons with ~25 Mev were found to produce defects with the following levels: E_c-0.24 ev, E_c-0.36 ev, E_v+0.25 ev and E_v+0.11 ev. There are 3 figures, 2 tables, and 7 references: 3 Soviet and 4 non-Soviet. The three references to English-language publications read as

Card 2/3

Radiation defects caused by ...

follows: J. W. Cleland et al. Phys. Rev. 102, 772, 1956; W. L. Brown et al. Phys. Rev. 92, 591, 1953; J. W. Cleland, J. H. Crawford. Progress in Semiconductors, 2, 1957.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR Leningrad (Physicotechnical Institute imeni A. F. Ioffe AS USSR, Leningrad)

SUBMITTED: August 8, 1961

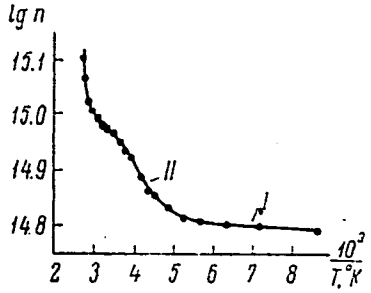

Fig. 1

Card 3/3

RYVKIN, S.M.; DOBREGO, V.P.; KONOVALENKO, B.M.; YAROSHETSKIY, I.D.

Induced impurity breakdown in compensated germanium and current oscillations related to it. Fiz.tver.tela 4 no.7: 1911-1914 Jl '62. (MIRA 16:6)

1. Fiziko-tekhnicheskiy institut imeni A.F.Ioffe AN SSSR, Leningrad.
(Breakdown, Electric) (Germanium--Electric properties)

L 13809-63 EWP(q)/EWT(m)/BDS AFFTC/ASD JD

ACCESSION NR: AP3003878 S/0181/63/005/007/1833/1841

AUTHOR: Vitovskiy, N. A.; Konovalenko, B. M.; Mashovets, T. V.; Ryvkin, S. M.; Yaroshetskiy, I. D. 19

TITLE: Gamma-ray-generated defects in germanium 21

SOURCE: Fizika tverdogo tela, v. 5, no. 7, 1963, 1833-1841

TOPIC TAGS: gamma-ray semiconductor irradiation, radiation defect, monopolar annealing, bipolar annealing, germanium irradiation, germanium defect, germanium

ABSTRACT: In the latest stage of research on the subject, dating back to 1959, a large number of n- and p-type specimens was investigated. N-type germanium was doped with antimony and had a donor concentration between $2 \cdot 10^{12}$ to $8 \cdot 10^{15}$ cm^{-3}; p-type germanium was doped with gallium and had an acceptor concentration between 10^{12} to 10^{15} cm^{-3}. The source was Co^{60} at a dosage of $2 \cdot 10^{11}$ $kv/cm^2 \cdot sec$ and temperature of 10C. The work was aimed at clarifying the saturation of irradiated specimens which occurs after polarity reversal, whereby further exposure to radiation, however prolonged, no longer affects the slope of the thermal dependence of carrier concentration. The latter remains equal to the activation energy. While the saturation process is evident up to very high concentrations

Card 1/2

KONOVALENKO, B.M.; RYVKIN, S.M.; YAROSHETSKIY, I.D.

Radiation defects in germanium caused by fast 28 Mev. electrons. Fiz. tver. tela 5 no.8:2075-2086 Ag '63. (MIRA 16:9)

1. Fiziko-tekhnicheskiy institut im. A.F.Ioffe AN SSSR, Leningrad.
(Germanium crystals--Defects) (Electrons)

L 12006-65 EWT(l)/EWG(k)/EWT(m)/EPF(c)/EPF(n)-2/EEC(t)/EWP(b)/EWP(t) Pz-6/
Pr-4/Pu-4 IJP(c)/AS(mp)-2/AFWL/SSD/ASD(a)-5/BSD/ESD(gs)/ESD(t) JD/GG/AT

ACCESSION NR: AP4046643 S/0181/64/006/010/3166/3168

AUTHOR: Gerasimov, A. B.; Konovalenko, B. M.; Yaroshetskiy, I. D.; Barkalaya, A. A.

TITLE: Impurity photoconductivity produced in germanium by gamma-ray irradiation

SOURCE: Fizika tverdogo tela, v. 6, no. 10, 1964, 3166-3168

TOPIC TAGS: gamma irradiation, photoconductivity, germanium, forbidden band, line spectrum, carrier density, impurity conductivity

ABSTRACT: This is a continuation of earlier research in which one of the authors participated (S. M. Ry*vkin, R. Yu. Khansevarov, I. D. Yaroshetskiy, FTT v. 3, 211, 1961), using a larger γ-ray flux in order to observe a more extensive line spectrum in the forbidden band. In this case n- and p-type germanium with initial carrier densities n_0 = (2--6) x 10^{13} and P_0 = (0.6--2) x 10^{13} cm^{-3} were used. The samples

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were exposed to γ rays from Co^{60} at a dose rate 80--90 r/sec, using an installation described elsewhere (B. M. Konovalenko, S. M. Ry*vkin, I. D. Yaroshetskiy, and L. P. Bogomazov, Atomnaya energiya v. 9, 408, 1960). The results are illustrated in Fig. 1 of the enclosure. The spectral curves disclose a large number of bends and ledges, pointing to a complicated spectrum of the local levels in the forbidden band. Measurements of all the investigated samples indicate the presence of the following energy levels: $E_v + 0.52$, $E_v + 0.48$, $E_v + 0.43$, $E_v + 0.41$, $E_v + 0.37$, $E_v + 0.33$, $E_v + 0.31$, and $E_v + 0.27$. This spectrum coincides fully with the spectrum of the local levels produced in the central part of the forbidden band when germanium is irradiated with fast neutrons, to which the levels with energies $E_v + 0.31$ and $E_v + 0.43$ eV, which are symmetrical relative to the center of the forbidden band, are added. It is further concluded that the various levels introduced by impurities in the central part of the forbidden band are not due to any clustering of the point defects with the atoms of the doping impur-

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L 12006-65
ACCESSION NR: AP4046643

2

ity. "The authors are deeply grateful to S. M. Ry*vkin for a discussion of the results." Orig. art. has: 1 figure.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR (Physicotechnical Institute, AN SSSR)

SUBMITTED: 18May64 ATD PRESS: 3120 ENCL: 01

SUB CODE: IC, NP NO REF SOV: 003 OTHER: 000

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L 12027-65 EWT(1)/EWG(k)/EWT(m)/EPA(sp)-2/EPA(w)-2/EEC(t)/EWP(t)/ERG(b)-2/EWP(b)/EWA(m)-2 Pz-6/Pab-10/Peb IJP(c)/SSD/ESD/AS(mp)-2/ASD(m)-3/AFWL/ESD(gs)/ESD(t) AT/JD

ACCESSION NR: AP4046651 S/0181/64/006/010/3184/3186

AUTHOR: Gerasimov, A. B.; Konovalenko, B. M.

TITLE: Low-temperature irradiation of germanium with fast electrons

SOURCE: Fizika tverdogo tela, v. 6, no. 10, 1964, 3134-3186

TOPIC TAGS: germanium, electron irradiation, low temperature research, dislocation effect, annealing, impurity conductivity, photoconductivity

ABSTRACT: Preliminary results are presented on low-temperature irradiation of n-type Ge with $N_d = 2 \times 10^{14}$--2×10^{15} cm^{-3}, including samples without and with dislocations (dislocation density 10^7--10^8 cm^{-2}), and also of p-type Ge with $N_a = 8 \times 10^{14}$--4×10^{15} cm^{-3}. The samples were irradiated with 3.5-Mev electrons at T = 77K (the samples were kept in liquid nitrogen). The irradiated samples were kept in the nitrogen for several days until their resistance sta-

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bilized, and then subjected to isochronous annealing to room temperature with an interval of 20°-30° between annealing points and with an annealing time 15 minutes. After each annealing, measurements were made at 77K of the Hall coefficient, the conductivity, and of the spectral characteristic of the impurity photoconductivity. All n-type samples were converted by irradiation with doses of 2.7×10^{16} and 1.1×10^{17} el/cm^2 into p-type with a Fermi level located near $\mu = E_v + 0.1$ ev. A typical plot of the variation of the conductivity during the annealing is shown in Fig. 1 of the enclosure. The impurity photoconductivity spectral characteristic was strongly dependent on the annealing stage, as illustrated in Fig. 2 of the enclosure. The measurements on n-type samples showed that the low-temperature irradiation produces, other conditions being equal, entirely different results than irradiation at room temperature. This difference is manifest in the fact that at low temperatures the Fermi level drops much lower. A noticeable difference in the Fermi level is observed also when a comparison is made between the results

of low-temperature irradiation and irradiation at room temperature of samples with and without dislocations. All the results indicate that stepwise isochronous annealing brings about noticeable changes in the structure of the radiation defects produced by low-temperature irradiation of germanium. "The authors are grateful to S. M. Ryʼvkin and I. D. Yaroshetskiy for a discussion of the work, and to V. A. Petrovskiy for collaborating with the irradiation of the samples." Orig. art. has: 2 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR (Physicotechnical Institute, AN SSSR)

SUBMITTED: 01Jun64 ATD PRESS: 3120 ENCL 02

SUB CODE: IC, NP NO REF SOV: 005 OTHER: 002

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L 12027-65
ACCESSION NR: AP4046651

ENCLOSURE: 01

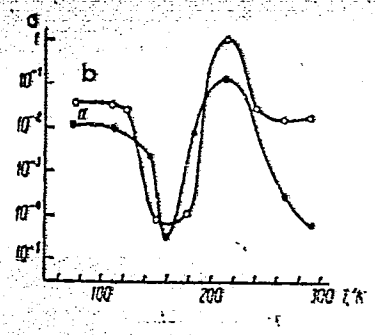

Fig. 1. Typical variation of conductivity during the course of isochronous annealing: a - n-type sample, b - p-type sample.

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L 61896-65 EWT(l)/EWT(m)/EPA(w)-2/T/EWP(t)/EWP(b)/EWA(m)-2 Pz-6/Pi-4
[illegible] JD/AT

ACCESSION NR: AP5019886 UR/0181/65/007/008/2545/2547

36
34

AUTHOR: Gerasimov, A. B.; Konovalenko, B. M.

B

TITLE: Low-temperature annealing of germanium irradiated with fast electrons

27

SOURCE: Fizika tverdogo tela, v. 7, no. 8, 1965, 2545-2547

TOPIC TAGS: annealing, metal heat treatment, electron beam hardening

14

ABSTRACT: Results are presented of an investigation of isochronous annealing of [illegible] with different donor concentrations, irradiated with comparatively small fluxes of 3-Bev electrons (fluxes insufficient to change the type of conductivity) in a temperature range from 77 to 300K. Three annealing stages appeared clearly: at 120—140K, 190—220K, and 270—300K. In each of these stages the carrier concentrations changed monotonically in the direction of the initial value (before irradiation). The temperature range of each stage is practically the same as [illegible] specimens which changed their conductivity to opposite. In most of the n- and [illegible] specimens (after irradiation) the mobility at the beginning of the second [illegible] a maximum. With a further rise of temperature, mobility decreased in the n-type specimens, while in the p-type specimens it remained practically constant. Activation energies for all three stages were determined for n- and p-type isotherm-

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L 61896-65

ACCESSION NR: AP5019886

2

ally annealed specimens. The following values were obtained:

E_1 = (0.27 ± 0.03) ev, E_2 = (0.66 ± 0.05) ev, and E_3 = (1.08 ± 0.1) ev.

The activation energies for the second and third stages were close to the activation energy values for the migration of vacancies and interstitial atoms in germanium (0.20 and 0.6 ev); the second stage apparently is associated with the migration of interstitial atoms, while the third stage is related to the migration of vacancies. During the first stage, it is possible that recombination of nearby Frenkel defects takes place. In the first stage the Fermi level shifted toward the ion band, while the spectral distribution of photoconductivity in specimens which changed their type of conductivity did not change. For the second stage an increase in carrier concentrations in specimens of both types was characteristic. During the third stage the Fermi level rose in all specimens. Orig. art. has: 1 figure. [JA]

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SUBMITTED: 25Mar65 ENCL: 00 SUB CODE: MM,NP

NO REF SOV: 001 OTHER: 003 ATD PRESS: 4060

Card 2/2

L 65058-65 EWT(l)/EWT(m)/EPF(c)/EPF(n)-2/T/EWA(h) IJP(c) GG/AT

ACCESSION NR: AP5019894 UR/0181/65/007/008/2562/2563

AUTHOR: Gerasimov, A. B.; Dolidze, N. D.; Konovalenko, B. M.; Ryvkin, S. M.

TITLE: On the character of the hysteresis of the volt-ampere characteristic of a germanium n-p junction produced by irradiation

SOURCE: Fizika tverdogo tela, v. 7, no. 8, 1965, 2562-2563

TOPIC TAGS: germanium, volt ampere characteristic, electron bombardment, electric hysteresis, semiconductor research

ABSTRACT: The authors observed a hysteresis effect in the investigation of an n-p junction produced by bombarding n-Ge single crystals with fast electrons. The volt-ampere characteristic obtained at 77K when the sample was illuminated in the barrier direction is shown in Fig. 1 of the Enclosure. The hysteresis consists in the fact that when the voltage is increased the characteristic is represented by the lower curve, when the voltage reaches V_1 there is an abrupt rise in the current, and when the voltage is then decreased the characteristic is represented by the upper curve. If the barrier-layer voltage is applied in pulses, the breakdown occurs at voltages lower than V_1. This hysteresis can be explained by assuming that the sample consists of two series-connected parts, an element in which the breakdown takes place and whose volt-ampere characteristic has a negative-resistance

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L 65058-65

ACCESSION NR: AP5019894 .6

portion, and one which exhibits ballast properties. The former is identified with the n-p junction itself, and the latter with the high-resistance portion of the sample. The effect of deep levels on the breakdown characteristics is discussed briefly from the point of view of space charge exchange inside the sample. Orig. art. has: 2 figures. [02]

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute, AN SSSR); Tbilisskiy gosudarstvennyy universitet (Tbilisi State University)

SUBMITTED: 07Apr65 ENCL: 01 SUB CODE: SS

NO REF SOV: 005 OTHER: 002 ATD PRESS: 4084

Card 2/3

L [illegible]-65

ACCESSION NR: AP5019894

ENCLOSURE: 01

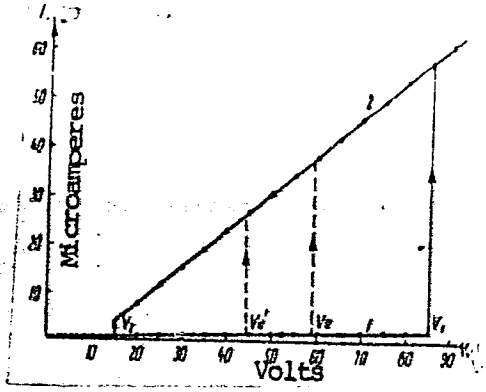

Fig. 1. Volt-ampere characteristic of sample in the barrier direction.

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L 09899-67 EWT(l)/EWT(m)/EWP(t)/ETI IJP(c) AT/JD
ACC NR: AP6033561 SOURCE CODE: UR/0181/66/008/010/2994/2998

AUTHOR: Gerasimov, A. B.; Konovalenko, B. M.; Kotina, I. M.; Umarova, Kh. F.

ORG: Physicotechnical Institute imeni A. F. Ioffe AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut) AN SSSR

TITLE: Kinetics of bipolar impurity photoconductivity of silicon with radiation defects

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 2994-2998

TOPIC TAGS: photoconductivity, bipolar photoconductivity, radiation, radiation defect, conductivity

ABSTRACT: Silicon samples with radiation defects at T = 77K were observed to be characterized by distinctive kinetics in the increase of their impurity photoconductivity. An explanation is offered for this phenomenon, which is shown to be related to the bipolarity of impurity excitation, and an approximate computation is made of the kinetics of inverse overcharge for a case of low level excitation. The

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cross-section of hole capture at the radiation defect level E_c—0.40 ev is determined. Orig. art. has: 7 formulas and 5 figures. [Authors' abstract]

SUB CODE: 20/ SUBM DATE: 28Mar66/ ORIG REF: 004/ OTH REF: 002/

Card 2/2 mb

ACC NR: AP6036962 (A,N) SOURCE CODE: UR/0181/66/008/011/3226/3231

AUTHOR: Gerasimov, A. B.; Konovalenko, B. M.; Ryvkin, S. M.; Umarova, Kh. F.; Yaroshetskiy, I. D.

ORG: Physicotechnical Institute im. A. F. Ioffe, AN SSSR, Leningrad (Fiziko-tekhnicheskiy institut AN SSSR)

TITLE: Photoelectret state in silicon with radiation defects

SOURCE: Fizika tverdogo tela, v. 8, no. 11, 1966, 3226-3231

TOPIC TAGS: photoelectret, crystalline silicon, radiation effect

ABSTRACT: The photoelectret state (PS) and the dependence of its properties on the concentration of free carriers and the concentration of locallevels in the forbidden band were studied on two groups of n- and p-type silicon samples with different positions of the Fermi level after irradiation with fast electrons (which produced radiation defects). The dependence of dark polarization on the time of application of the polarizing voltage and its magnitude was measured, this being one of the chief characteristics of PS. Differences in the PS of the two groups of samples were also manifested in the persistence of polarization. The spectral selectivity of the PS was also determined. Analysis of the spectral curves showed characteristics corresponding to certain local levels of radiation defects; the curves break off abruptly in the shortwave range on passing to bipolar excitation, starting at quantum energies at

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ACC NR: AP6036962 APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000824320015-6

which the formation of minority carriers is possible. The results of the study of PS during bipolar excitation are interpreted in the light of the substantial role played by optical charge exchange between impurity centers in the observed effect. Authors take this opportunity to thank I. M. Kotina for her assistance. Orig. art. has: 7 figures.

SUB CODE: 20/ SUBM DATE: 07Apr66/ ORIG REF: 009/ OTH REF: 001

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